

QA65 – Soy Foods for Children

QUESTION:

I have been consulted by a mother of a 7 year old boy regarding the use of soy in children. She comments that her son's performance in school and behavior in general is improved with more protein in his diet. He does not accept meat well, though will eat peanut butter, eggs and dairy. In an effort to incorporate more protein in his diet, she has tried "soy shakes" made with a soy protein powder. I have read some literature indicating soy may not be advisable for children because of its hormone related properties. What is the current advice for soy use in children?

ANSWER:

Most of the studies available are on the effects of soy-based infant formulas on infants and some looked at effects of these formulas later in life. Infants fed soy-based formulas grow and develop normally, and bone mineral content is similar in infants who consume soy-based formula versus infants who consume human milk or cow milk-based formula. For adolescents who received soy-based formulas as infants there have been no reports of abnormal pubertal development. Also, for adults who received soy-based formulas as infants there have been no reports of infertility. One study examined the association between infant exposure to soy formula and health in young adulthood, with an emphasis on reproductive health. They found that exposure to soy formula does not appear to lead to different general health or reproductive outcomes than exposure to cow's milk formula. They also found that women who had been fed soy formula reported slightly longer duration of menstrual bleeding, and greater discomfort with menstruation.

Many studies have reported that phytoestrogens (estrogen like molecules present in plants; the form present in soy is called isoflavones) have a potential for protecting against hormone-dependent diseases, such as breast cancer and prostate cancer. An epidemiological study has evaluated the association of adolescent soy food intake with the risk of breast cancer. This study suggests that high soy intake during adolescence may reduce the risk of breast cancer in later life. In addition, cholesterol levels are decreased in infants and adults with increased consumption of soy products, and hot flashes reported to be decreased in postmenopausal women.

References:

- 1) Klein KO. Isoflavones, Soy-Based Infant Formulas and Relevance to Endocrine Function. *Nutrition Reviews*, 1998, 56(7): 193-204.
- 2) Strom BL et al. Exposure to Soy-based Formula in Infancy and Endocrinological and Reproductive Outcomes in Young Adulthood. *JAMA*, 2001, 286(7): 807-14.
- 3) Shu XO et al. Soyfood Intake during Adolescence and Subsequent Risk of Breast Cancer among Chinese Women. *Cancer Epidemiol Biomarkers Prev*, 2001, 10(5): 483-8.
- 4) Lephart ED et al. Neurobehavioral Effects of Dietary Soy Phytoestrogens. *Neurotoxicology and Teratology*, 2002, 24(1): 5-16.